

AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

repeat all systems

7. (Currently Amended) The composition according to claim 19 ~~6~~, wherein said glycosaminoglycan is selected from the group consisting of hyaluronic acid, heparin, heparin sulfate, low molecular weight heparin, dermatan sulfate, chondroitin sulfate, polysulfated glycosaminoglycan, keratan sulfate, salts thereof and derivatives thereof.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled).

11. (Currently Amended) The composition according to claim 19, wherein said ~~complex carbohydrates~~ glycosaminoglycan comprise a mixture of molecular weight ranges.

12. (Previously Presented) The composition according to claim 11, wherein said molecular weight ranges further comprise at least one fraction from 1,000 to less than 50,000 daltons, or from 100,000 to 300,000 daltons.

apparent →

13. (Cancelled)

14. (Currently Amended) The composition according to claim 19 ~~11~~, wherein said ~~complex carbohydrates~~ glycosaminoglycans range from two different size polymers of the same ~~complex carbohydrates~~ glycosaminoglycan.

15 - 18. (Cancelled)

19. (Currently Amended) A composition which comprises: a pharmacologically effective amount of at least one orally ingestable or mucosally absorbable ~~complex carbohydrate~~ selected from the group consisting of ~~oligosaccharides, sialylated oligosaccharides, polysaccharides, and glycosaminoglycans;~~ glycosaminoglycan, wherein said ~~complex carbohydrate~~ glycosaminoglycan comprises at least one fraction having a molecular weight in

~~the range of greater than 1,000,000 daltons, wherein said complex carbohydrate will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, with the proviso that said composition does not contain an essential oil as an active ingredient, and wherein the complex carbohydrate contains up to 5% by weight protein contaminants, and~~

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ingredient, and wherein the complex carbohydrate contains up to 5% by weight protein contaminants, and

a carrier selected from the group consisting of a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestable gel, an ingestable foam, an ingestable capsule, a tablet, an ingestable tablet, an ingestable dissolvable tablet, a suppository, and an ingestable nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

20 - 21. (Cancelled)

22. (Currently Amended) A composition which comprises, as an active ingredient, a pharmacologically effective amount of at least one orally ingestable or mucosally absorbable ~~complex carbohydrate selected from the group consisting of a mixture of molecular weight ranges of hyaluronic acid glycosaminoglycans, wherein said molecular weight ranges comprise at least one fraction greater than 1,000,000 daltons, wherein said complex carbohydrate will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to~~

~~mammals~~, and wherein the complex carbohydrate contains up to 5% by weight protein contaminants, and

a carrier selected from the group consisting of a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestible gel, an ingestible foam, an ingestible capsule, a tablet, an ingestible tablet, an ingestible dissolvable tablet, a suppository, and an ingestible nutritional supplement.

23. (Currently Amended) A composition which comprises as an active ingredient a pharmacologically effective amount of at least one orally ingestible or mucosally absorbable ~~complex carbohydrate selected from the group consisting of oligosaccharides, sialylated oligosaccharides, polysaccharides and glycosaminoglycans~~, glycosaminoglycan, wherein said ~~complex carbohydrates~~ glycosaminoglycan comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, wherein said ~~complex carbohydrates~~ glycosaminoglycan will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, and wherein the ~~complex carbohydrates~~ glycosaminoglycan contains up to 5% by weight protein contaminants, and

a carrier selected from the group consisting of a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestible gel, an ingestible foam, an ingestible capsule, a tablet, an ingestible tablet, an ingestible dissolvable tablet, a suppository, and an ingestible nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an

ingestible tablet.

24. (Withdrawn) A method of treatment of inflammation, pain or itching which comprises orally or mucosally administering to a mammal the composition of claim 19.

25. (Withdrawn) The method of claim 24, wherein said application is made orally.

26. (Withdrawn) The method of claim 24, wherein said oral or mucosal application form is selected from the group consisting of a liquid, an emulsion, a suspension, a cream, an ointment, a gel, a foam, a solid, a powder and a gum.

27. (Withdrawn -- Currently Amended) The method of claim 24, wherein said inflammation, pain or itching results from arthritis, bursitis, athletic injuries, tendonitis, trauma, gastritis, colitis, esophagitis, bronchitis, sore throat, tonsillitis, tendonitis, fibromyalgia, TMJ, dental pain, bruising, poor circulation, muscle cramps, tired feet, allergies, poison ivy, insect bites/stings, asthma, anaphylaxis, surgery, childbirth, sunburn, burns, edema related to diabetes, decubitus ulcers, superficial cuts and scrapes, open wounds, dry skin, psoriasis, Attention Deficit Hyperactivity Disorder (ADHD), plaque formation associated with heart disease and stroke, increased degradation of spinal nerves post spinal cord injury, adhesion formation post surgery, scar formation post surgery, wound healing, ganglion formation, Alzheimer's disease, HIV, cancer, wrinkles, and hair loss.

28 - 29. (Cancelled)

30. (Withdrawn) A method of inhibiting the Adhesion cascade by orally or mucosally administering to a mammal the composition of claim 19.

31. (Cancelled)

32. (Withdrawn - Currently Amended) A method for preventing or treating inflammation, pain, tumor development and metastasis or allergy-related diseases and conditions which comprises orally or mucosally administering to a mammal the composition of claim 19.

33. (Withdrawn - Currently Amended) A method for preventing or treating inflammation, pain, tumor development and metastasis or allergy-related diseases and conditions which comprises orally administering to a mammal the composition of claim 19.

34. (Withdrawn - Currently Amended) A method for preventing or treating inflammation, pain, tumor development and metastasis or allergy-related diseases and conditions which comprises mucosally administering to a mammal the composition of claim 19.

35. (Withdrawn - Currently Amended) The method of Claims 33 or 34 wherein the inflammation, pain, tumor development and metastasis or allergy-related diseases and conditions are selected from the group consisting of arthritis, bursitis, athletic injuries, tendonitis, trauma,

anaphylaxis, surgery, childbirth, gastritis, colitis, esophagitis, bronchitis, sore throat, tonsillitis, tendonitis, fibromyalgia, TMJ, dental pain, bruising, poor circulation, muscle cramps, tired feet, allergies, poison ivy, insect bites/stings, asthma, sunburn, burns, edema related to diabetes, decubitus ulcers, superficial cuts and scrapes, open wounds, dry skin, psoriasis, Attention Deficit Hyperactivity Disorder (ADHD), plaque formation associated with heart disease and stroke, increased degradation of spinal nerves post spinal cord injury, adhesion formation post surgery, scar formation post surgery, wound healing, ganglion formation, Alzheimer's disease, HIV, cancer, wrinkles, and hair loss.

36. (Currently Amended) The composition according to claim 19, wherein said at least one ~~complex carbohydrates~~ glycosaminoglycan further comprises a fraction having a molecular weight in the range of from 1,000 to less than 50,000 daltons.

37. (Currently Amended) The composition according to claim 19, wherein said at least one ~~complex carbohydrate~~ glycosaminoglycan further comprises a fraction having a molecular weight in the range of from 100,000 to 300,000 daltons.

38 - 40. (Cancelled)

41. (Previously Presented) The composition according to claim 19, wherein the form is selected from the group consisting of a liquid, an emulsion, a suspension, a solution, a cream, a gel, a foam, a solid, a powder, a spray, a gum and an ointment.

42. (Previously Presented) The composition according to claim 23, wherein the form is selected from the group consisting of a liquid, a gel, a solution, a suspension, an emulsion, an ointment, a cream, a solid, a powder, a gum and a spray.

43 - 45. (Cancelled)

46. (Previously Presented) The composition of claim 19, wherein said composition is a pain-relieving composition.

47. (Previously Presented) The composition of claim 19, wherein said composition is an orally delivered pain-relieving composition.

48. (Previously Presented) The composition of claim 19, wherein said composition is a mucosally delivered pain-relieving composition.

49. (Cancelled)

50. (Cancelled)

51. (Currently Amended) The composition of ~~claim~~ claims 23, 19 or 23, wherein the glycosaminoglycan complex-carbohydrate contains less than 98% by weight hyaluronic acid.

52. (Withdrawn) A method of treatment of inflammation, pain or allergy-related diseases and conditions which comprises mucosally applying to a mammal the composition of claim 19.

53. (Previously Presented) The composition of claim 19, wherein the active ingredient is present in an amount of at least 0.01% wt/vol.

54. (Currently Amended) The composition of claim 19, wherein the active ingredient is present in an amount of at least ~~1% wt/vol~~ administered in repeated low doses between 0.0001 mg and 100 mg.

55 - 58. (Cancelled)

59. (Currently Amended) The composition of claim ~~23~~ 19, wherein said at least one ~~complex-carbohydrate~~ glycosaminoglycan is of a low purity or cosmetic or food grade complex carbohydrate and further comprises a fraction having a molecular weight in the range of from 1,000 to less than 50,000 or from 100,000 to 500,000.

60. (Cancelled)

61 - 62. (Cancelled)

63. (Cancelled)

64. (Cancelled)

65. (Cancelled)

66. (Currently Amended) The compositions according to claims 41 or 42, wherein ~~the form of the composition is selected from the group consisting of drinks, drink mixes, foods, supplements, mouthwashes, toothpaste, gargle, the vaporizer liquid is a throat spray, vaporizers, the gum is a chewing gum or a dissolvable gum, the lozenge is throat lozenges, and the food is treats or treats, candy, capsules, tablets, dissolvable gum and suppositories.~~

67. (Cancelled)

68. (Cancelled)

69. (Previously Presented) The composition according to claim 19, wherein the ~~complex-carbohydrate-glycosaminoglycan~~ is a hyaluronic acid or salt or derivative thereof.

70. (Currently Amended) An orally ingested or mucosally absorbed pharmaceutical composition selected from the group consisting of a drink, a drink mix, food, candy, mouthwash,

toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, which comprises as an active ingredient a pharmacologically effective amount of at least one ~~complex carbohydrate~~ glycosaminoglycan ~~selected from the group consisting of oligosaccharides, sialylated oligosaccharides, polysaccharides, and glycosaminoglycans~~, wherein said at least one ~~complex carbohydrate~~ glycosaminoglycan comprises at least one fraction having a molecular weight range greater than 1,000,000 daltons, ~~wherein said complex carbohydrate will cause an inflammatory response when injected into owl monkey eyes but will not cause and an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, and wherein the complex carbohydrate contains up to 5% by weight protein contaminants, wherein the glycosaminoglycan contains up to about 5% impurities, with the proviso that said composition does not contain an essential oil as an active ingredient, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.~~

71. (Cancelled)

72. (Currently Amended) The composition of claim ~~23~~ 19, wherein said low purity ~~complex carbohydrate~~ glycosaminoglycan contains up to about 5% impurities, and will cause reactions when injected into owl monkey eyes or joints of horses but will not cause reactions when applied to the skin of mammals or when delivered orally or mucosally to mammals.

73. (Currently Amended) An orally ingested or mucosally-absorbed pharmaceutical composition selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, which comprises:

an effective amount of at least one ~~complex-carbohydrate~~ glycosaminoglycan selected from the group consisting of ~~oligosaccharides, sialylated oligosaccharides, polysaccharides, and glycosaminoglycans~~ for treating inflammation, wherein said at least one ~~complex-carbohydrate~~ glycosaminoglycan comprises at least one fraction having a molecular weight range greater than 1,000,000 daltons, wherein said ~~complex-carbohydrate~~ glycosaminoglycan will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, and wherein the ~~complex-carbohydrate~~ glycosaminoglycan contains up to 5% by weight protein contaminants, with the proviso that said composition does not contain an essential oil as an active ingredient,

wherein said orally ingested or mucosally-absorbed pharmaceutical composition is selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

- 74. (Previously Presented) Drink comprising the composition of claim 73.
- 75. (Previously Presented) Drink mix comprising the composition of claim 73.
- 76. (Previously Presented) Food comprising the composition of claim 73.
- 77. (Previously Presented) Candy comprising the composition of claim 73.
- 78. (Previously Presented) Mouthwash comprising the composition of claim 73.
- 79. (Previously Presented) Toothpaste comprising the composition of claim 73.
- 80. (Previously Presented) Gargle comprising the composition of claim 73.
- 81. (Previously Presented) Vaporizer comprising the composition of claim 73.
- 82. (Previously Presented) Gum comprising the composition of claim 73.
- 83. (Previously Presented) Lozenge comprising the composition of claim 73.
- 84. (Previously Presented) Ingestable gel comprising the composition of claim 73.

85. (Previously Presented) Ingestable foam comprising the composition of claim 73.
86. (Previously Presented) Ingestable capsule comprising the composition of claim 73.
87. (Previously Presented) Tablet comprising the composition of claim 73.
88. (Previously Presented) Ingestable tablet comprising the composition of claim 73.
89. (Previously Presented) Ingestable dissolvable tablet comprising the composition of claim 73.
90. (Previously Presented) Suppository comprising the composition of claim 73.
91. (Previously Presented) Ingestable nutritional supplement comprising the composition of claim 73.
92. (Currently Amended) An orally ingested or mucosally absorbed pharmaceutical composition selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, which comprises, as an active ingredient, a pharmacologically effective amount of

at least one ~~complex-carbohydrate~~ glycosaminoglycan selected from the group consisting of a mixture of molecular weight ranges of hyaluronic acid, wherein said molecular weight ranges comprise at least one fraction greater than 1,000,000 daltons, wherein said ~~complex-carbohydrate~~ glycosaminoglycan will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, and wherein the ~~complex-carbohydrate~~ glycosaminoglycan contains up to 5% by weight protein contaminants, with the proviso that said composition does not contain an essential oil as an active ingredient,

wherein said orally or mucosally-administered pharmaceutical composition is selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

93. (Previously Presented) The composition of claim 92, wherein the hyaluronic acid is in a total concentration of between 0.5% and 3.0% wt/vol.

94. (Currently Amended) An orally ingested or mucosally-absorbed pharmaceutical composition selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional

supplement, which comprises as an active ingredient a pharmacologically effective amount of at least one ~~complex-carbohydrate glycosaminoglycan selected from the group consisting of oligosaccharides, sialylated oligosaccharides, polysaccharides and glycosaminoglycans~~, wherein said ~~complex-carbohydrate glycosaminoglycan~~ comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, wherein said ~~complex-carbohydrate glycosaminoglycan~~ will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals, and wherein the ~~complex-carbohydrate glycosaminoglycan~~ contains up to 5% by weight protein contaminants, with the proviso that said composition does not contain an essential oil as an active ingredient,

wherein said orally ingested or mucosally-absorbed pharmaceutical composition is selected from the group consisting of drink, drink mix, food, candy, mouthwash, toothpaste, gargle, vaporizer, gum, lozenge, ingestable gel, ingestable foam, ingestable capsule, tablet, ingestable tablet, ingestable dissolvable tablet, suppository, and ingestable nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

95. (Cancelled)

96. (Cancelled)

97. (Withdrawn -- Currently Amended) A method for relieving joint pain or other discomforts associated with osteoarthritis in a mammal comprising the step of delivering to said mammal by oral ingestion of a nutritional supplement consisting essentially of an effective amount of hyaluronic acid, or a salt or digest thereof, and a food or drink carrier, wherein the effective amount of hyaluronic acid, or a salt or digest thereof, is ~~from about 0.0001 mg to 100 mg~~ administered in repeat low doses of between 0.0001 mg and 100 mg.

98. (Withdrawn) The method of claim 97, further comprising the step of adding the hyaluronic acid, or a salt or digest thereof, to the carrier, and wherein the carrier comprises food or water.

99. (Withdrawn) The method of claim 97, wherein the nutritional supplement is provided in capsule form.

100. (Withdrawn) The method of claim 97, wherein the mammal is a human, an equine, a canine, or feline species.

101. (Withdrawn -- Currently Amended) A method for reducing discomfort of fibromyalgia in a person afflicted with fibromyalgia comprising the step of delivering to said person by oral ingestion a nutritional supplement consisting essentially of an effective amount of hyaluronic acid, or a salt or digest thereof, and a nutritionally acceptable carrier, wherein the effective amount of hyaluronic acid, or a salt or digest thereof, is ~~from about 0.0001 mg to 100~~

~~mg per dose administered in repeated low doses of between 0.0001 mg and 100 mg.~~

102. (Withdrawn) The method of claim 101, further comprising the step of adding the hyaluronic acid, or a salt or digest thereof, to the carrier, and wherein the carrier comprises food or water.

103. (Withdrawn) The method of claim 101, wherein the nutritional supplement is provided in capsule form.

104. (Withdrawn -- Currently Amended) A method for relieving joint pain or other discomforts associated with joint disorders in a mammal comprising the step of delivering to said mammal by oral ingestion a nutritional supplement consisting essentially of an effective amount of hyaluronic acid, or a salt or digest thereof, and a food or drink carrier, wherein the effective amount of hyaluronic acid, or a salt or digest thereof, is administered in repeated low doses of between from about 0.0001 mg to about 100 mg. per dose.

105. (Withdrawn) The method of claim 102, wherein the nutritional supplement is provided in tablet form.

106. (Withdrawn) The method of claim 104, further comprising the step of adding the hyaluronic acid, or a salt or digest thereof, to the carrier, and wherein the carrier comprises food or water.

107. (Withdrawn) The method of claim 104, wherein the nutritional supplement is provided in capsule form.

108. (Withdrawn) The method of claim 104, wherein the mammal is a human, an equine, a canine, or a feline species.

109. (Withdrawn) The method of claim 104, wherein the joint pain is the result of an arthritic condition.

110. (Withdrawn) The method of claim 104, wherein the arthritic condition is selected from the group consisting of osteoarthritis and rheumatoid arthritis.

111. (Withdrawn) The method of claim 104, wherein the joint pain is the result of an inflammatory condition.

112. (Previously Presented) A nutritional supplement consisting essentially of an nutritionally effective amount of hyaluronic acid, or a salt or digest thereof, and a food or drink carrier, the nutritional supplement provided in an orally ingestible dosage form.

113. (Currently Amended) The nutritional supplement of claim 112, wherein the effective amount of hyaluronic acid is administered in repeated low doses of between 0.0001 mg to and 100 mg.

114. (Previously Presented) The nutritional supplement of claim 112, wherein the orally ingestible dosage form is a capsule or gel seal.

115. (Previously Presented) Food or treat for horse or dog comprising the composition of claim 19.

116. (Withdrawn – Currently Amended) The method of claim 24, wherein said ~~complex-carbohydrate glycosaminoglycans~~ are administered in multiple low doses of between 0.0001 mg ~~to~~ and 100 mg. body weight.

117. (Currently Amended) A composition comprising at least one orally digestable or mucosally absorbable ~~complex-carbohydrate glycosaminoglycan~~ selected from the group consisting of ~~oligosaccharides, sialylated oligosaccharides, polysaccharides, and glycosaminoglycans~~, wherein said ~~complex-carbohydrate glycosaminoglycan~~ comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, and ~~wherein said complex-carbohydrate will cause an inflammatory response when injected into owl monkey eyes but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals; and wherein the complex-carbohydrate glycosaminoglycan contains up to 5% by weight protein contaminants, and wherein said at least one complex-carbohydrate glycosaminoglycan is mixed in a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestible gel, an~~

ingestable foam, an ingestable capsule, an ingestable tablet, a chewable tablet, a dissolvable tablet, and an ingestable nutritional supplement administered in repeated low doses of between 0.0001 and 100 mg so that they contain at least 0.00005mg of the complex-carbohydrate glycosaminoglycan, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

118. (Previously Presented) The composition of claim 19, wherein said composition is a topical, oral or mucosal composition.

119. (Currently Amended) A nutritional supplement consisting essentially of an nutritionally effective amount of hyaluronic acid, or a salt or digest thereof, wherein said hyaluronic acid comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, and wherein the complex-carbohydrate hyaluronic acid contains up to 5% by weight protein contaminants, the nutritional supplement provided in an orally ingestible dosage form, which is selected from the group consisting of a drink mix, a food, a candy, a gum, a lozenge, an ingestable gel, an ingestable foam, an ingestable capsule, an ingestable tablet, a chewable tablet, and a dissolvable tablet.

120. (Currently Amended) A composition which comprises a pharmacologically effective amount of at least one orally ingestable or mucosally absorbable complex-carbohydrate glycosaminoglycan selected from the group consisting of oligosaccharides, silylated oligosaccharides, polysaccharides, and glycosaminoglycans, wherein said complex-carbohydrate

glycosaminoglycan comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, wherein ~~said complex carbohydrate will cause an inflammatory response when injected into owl monkey eyes or joints of horses but will not cause an adverse reaction when applied to the skin of mammals or when delivered orally or mucosally to mammals,~~ and wherein the complex carbohydrate glycosaminoglycan contains up to 5% by weight protein contaminants, with the proviso that said composition does not contain an essential oil as an active ingredient, and a suitable carrier.

121. (Currently Amended) A nutritional supplement consisting essentially of a pharmacologically effective amount of hyaluronic acid, or a salt or digest thereof, wherein said hyaluronic acid comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, and wherein the ~~complex carbohydrate~~ hyaluronic acid contains up to 5% by weight protein contaminants, the nutritional supplement provided in an orally ingestible dosage form.

122. (Currently Amended) The composition of claim 19, wherein said ~~complex carbohydrate~~ glycosaminoglycan are administered in repeated low doses of between present in an amount of 0.0001 mg to 100 mg.

123. (Currently Amended) The composition of claim 70, wherein said ~~complex carbohydrate~~ glycosaminoglycans are administered in repeated low doses of between present in an amount of 0.0001 mg to and 100 mg.

124. (Previously Presented) The composition of claim 19, wherein the adverse reaction is selected from at least one of the groups consisting of irritation, blistering and rash.

125. (Currently Amended) A nutritional supplement comprising hyaluronic acid, or a salt or digest thereof, wherein said hyaluronic acid comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, wherein said salt, derivative or digest of hyaluronic acid contains protein contaminants up to 5% by weight.

126. (Previously Presented) A composition which comprises an orally ingestable or mucosally absorbable salt, derivative or digest of hyaluronic acid wherein said salt, derivative or digest of hyaluronic acid comprises at least one fraction having a molecular weight in the range of greater than 1,000,000 daltons, wherein said salt, derivative or digest of hyaluronic acid contains protein contaminants up to 5% by weight, and wherein said salt, derivative or digest of hyaluronic acid is nutritionally or pharmacologically effective.

127. (Currently Amended) The composition of claim 126, wherein the composition is in the form of a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestable gel, a liquid, an ingestable foam, an ingestable capsule, a tablet, an ingestable tablet, an ingestable dissolvable tablet, a suppository, and an ingestable nutritional supplement, with the proviso that when chondroitin sulfate is used as the sole glycosaminoglycan, the carrier is not a capsule or an ingestable tablet.

128. (New) A composition which comprises, as an active ingredient, a pharmacologically effective amount of at least one orally ingestable or mucosally absorbable mixture of molecular weight ranges of hyaluronic acid, wherein said molecular weight ranges comprise at least one fraction greater than 1,000,000 daltons as measured using a protein standard/intrinsic viscosity, and wherein the hyaluronic acid contains up to 5% by weight protein contaminants, and

a carrier selected from the group consisting of a drink, a drink mix, a food, a candy, a mouthwash, a toothpaste, a gargle, a vaporizer liquid, a gum, a lozenge, an ingestable gel, an ingestable foam, an ingestable capsule, a tablet, an ingestable tablet, an ingestable dissolvable tablet, a suppository, and an ingestable nutritional supplement.